

**ABSTRACT OF THE DISCLOSURE**

The present invention relates to identification of a receptor for a satiety factor, which is involved in body weight homeostasis. Mutations in this receptor are

5 associated with obese phenotypes. In particular, the present invention relates to identification and characterization of the receptor for leptin, including a naturally occurring soluble form of the receptor that is expected to modulate leptin activity, in particular to agonize leptin activity. The invention further relates to the nucleic acids encoding the receptor, and to methods for using the receptor, *e.g.*, to

10 identify leptin analogs, therapeutically, such as in gene therapy or in soluble form as an agonist or antagonist of leptin activity, or diagnostically.